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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,819	11/22/2002	Santosh Prasad Gaur	RPS920020018	9644

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EXAMINER

COBY, FRANTZ

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,819

Applicant(s)

GAUR ET AL.

Examiner

Frantz Coby

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2-3.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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This is in response to application filed on November 22, 2002 in which claims 1-17 are presented for examination.

Status of Claims

Claims 1-17 are pending.

Information Disclosure Statement

The information disclosure statement filed on November 29, 2002 is in compliance with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been placed in the application file and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 1, 6, 11, 16 and 17, the preamble of the aforementioned independent claims recite method, system and computer readable medium containing instructions for optimizing data searches in tree structures. However, the body of the

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claims is silent on the steps and manner to arrive with optimizing data searches in tree structures. This is; therefore, render claims 1, 6, 11, 16 and 17 indefinite.

As per claims 2-5, 7-10, 12-15, these claims are also rejected at least for their dependencies directly or indirectly on the rejected claims above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyland et al. US 2003/0009474 A1 in view of Loizides et al. U.S. Patent no. 3,634,226.

As per claims 1, 6, 11, and 16-17, Hyland et al. disclose "organizing multiple search levels of data into sub-trees contained in fixed size blocks of shared external memory of an embedded processing system" by providing a binary search tree that is organized in a multiplicity of levels (See Hyland et al. Abstract).

Although Hyland et al. make a search for the nodes in a pattern; It is noted, however, Hyland et al. did not specifically disclose the claimed feature of "requiring each reference to the data to proceed from one-half of a sub tree during a descent of the search tree based on a search pattern" as recited in the instant claims 1, 6, 11, and 16-17. On the other hand, Loizides et al. achieved the aforementioned claimed feature by providing a multilevel compressed index search method and means which requires a sequential search to begin at a pointer that locates the middle of the index (See Loizides et al. Col. 5, line 67-Col. 6, line 21; Col. 27, lines 24-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the search tree method of Hyland et al. wherein the search flow algorithm provided thereof (See Hyland et al. Figure 8) would have incorporated the combined and binary search mechanism of Loizides et al. The motivation being to have greatly increased the search speed of Hyland's searching method (See Loizides et al. Col. 4, lines 9-12).

As per claims 2-5, most of the limitations of these claims have been noted in the rejection of claim 1 above. In addition, Loizides et al. disclose the claimed limitations "choosing the one-half before the descent from a root level of the search tree to reduce

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the size of the required reference"; "choosing further comprises choosing the one-half based on a next bit test value of a bit in the search pattern"; wherein the one-half further comprises a right side or left side of a branch table of the sub-tree"; wherein organizing multiple search levels further comprises organizing the sub-trees to provide multiple levels of data with each reference" (See Loizides et al. Figure 6).

As per claims 7-10, most of the limitations of these claims have been noted in the rejection of claim 6 above. In addition, Loizides et al. disclose the claimed features of "wherein the tree search engine chooses the one-half before the descent from a root level of the search tree to reduce the size of a required reference"; "wherein the tree search engine chooses the one-half based on a next bit test value of a bit in the search pattern"; "wherein the one-half further comprises a right side or left side of a branch table of the sub-tree"; "wherein the multiple search levels further comprise organized sub-trees that provide multiple of data with each reference" (See Loizides et al. Figure 6, Col. 5, line 67-Col. 6, line 21; Col. 27, lines 24-50).

As per claims 12-15, most of the limitations of these claims have been noted in the rejection of claim 11 above. In addition, Loizides et al. disclose the claimed features of "choosing the one-half before the descent from a root level of the search tree to reduce the size of a required reference"; "wherein the step of choosing further comprises choosing the one-half based on a next bit test value of a bit in the search pattern"; "wherein the one-half further comprises a right side or left side of a branch

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table of the sub-tree"; "wherein organizing multiple search levels further comprises organizing the sub-trees to provide multiple levels of data with each reference" (See Loizides et al. Col. 5, line 67-Col. 6, line 21; Col. 27, lines 24-50).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frantz Coby whose telephone number is 703 305-4006. The examiner can normally be reached on Maxi-Flex (Monday-Saturday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703 308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Frantz Coby
Primary Examiner
Art Unit 2171

July 9, 2004